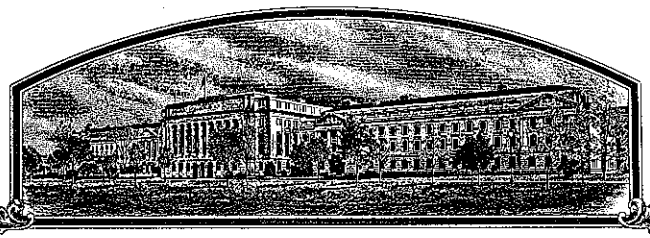
No. 9800048



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Virginia Tech Intellectual Properties, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF 74 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Accomac'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this thirty-first day of January, in the year of our Lord two thousand.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-0

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protect certificate is to be issued (7 U.S.C. 2421). Information is held confiden until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Virginia Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
V88-1234

3. VARIETY NAME
Accomac

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
College of Ag. and Life Sciences
Virginia Polytechnic Institute & State Univ.
Blacksburg, VA 24061

5. TELEPHONE *(include area code)*
(540) 231-6336

6. FAX *(include area code)*
(540) 231-4163

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9800048

FILING DATE: ~~12/24/97~~ Late 15.VII.? 24 December 1997

FEES RECEIVED: FILING AND EXAMINATION FEE: $ 2450.00 DATE: 12/24/97

CERTIFICATION FEE: $ 300 DATE: 10/27/98

7. GENUS AND SPECIES NAME
Glycine max

8. FAMILY NAME *(Botanical)*
Leguminoseae

9. CROP KIND NAME *(Common name)*
Soybeans

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
Virginia Agricultural Experiment Station

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Glenn R. Buss
Crop and Soil Environmental Sciences Dept.
Virginia Tech
Blacksburg, VA 24061-0404

14. TELEPHONE *(include area code)*

15. FAX *(include area code)*

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*
- a. [X] Exhibit A. Origin and Breeding History of the Variety
- b. [X] Exhibit B. Statement of Distinctness
- c. [X] Exhibit C. Objective Description of the Variety
- d. [ ] Exhibit D. Additional Description of the Variety
- e. [X] Exhibit E. Statement of the Basis of the Applicant's Ownership
- f. [X] Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
- g. [X] Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)?*
[X] YES *(If "yes," answer items 18 and 19 below)* [ ] NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
[X] YES [ ] NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
[X] FOUNDATION [ ] REGISTERED [X] CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
[X] YES *(If "yes," give names of countries and dates)* [ ] NO

United States Spring, 1997

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
G. T. Gubb Jr. for RQC			
NAME *(Please print or type)* R.Q. Cannell		NAME *(Please print or type)*	
CAPACITY OR TITLE Director, VAES	DATE 12-18-97	CAPACITY OR TITLE	DATE

SD-470 (04-95) *(Previous editions are to be destroyed)* *(See reverse for instructions and information collection burden statement)*

Exhibit A

Origin and Breeding History of Accomac

Accomac originated from a single F_5 plant from the cross of D77-6056 x LS79-330. Both parents had resistance to Race 3 of soybean cyst nematode (SCN) and the rootknot nematodes, Meloidogyne arenaria and M. incognita. The cross was advanced to the F_4 generation as a bulk population with no selection. The F_5 generation was planted in 1987 at the Tidewater AREC, Suffolk, VA, in a field infested with SCN. Fifty-nine plants that appeared to be resistant were selected and threshed individually. A progeny row from each plant was planted at the Eastern Virginia AREC, Warsaw, VA, in 1988 and further selection was practiced based on visual phenotype. Accomac was one of the selected lines. It was evaluated as V88-1234 in local breeding line tests from 1989 through 1991 and in the Southern Regional Cooperative Soybean tests from 1992 through 1994.

In order to produce pure stock seed, 42 plants of V88-1234 were harvested individually in 1992 and seeds from each plant were planted in single rows in 1993. One row was discarded as being atypical, and the remainder were harvested and composited. This seed was planted at the Eastern Virginia AREC in 1995 and approximately seven bushels were harvested and designated as Breeder Seed. The first Foundation Seed was produced in 1996.

A very low percentage of plants with gray pubescence and brown hilum was observed in early increases of Accomac, but these have largely been removed by roguing. The incidence of such plants is now less than 0.1%. No other variants have been observed.

Exhibit B

Exhibit B

Statement of Distinctness

A search of the PVP soybean database revealed ~~eight~~ seven cultivars that have purple flower color, tawny pubescence color, tan pod color, maturity group V, and are resistant to race 3 of soybean cyst nematode. Three of these (A5939, RA-502 and S59-60) can be distinguished from Accomac because they are also resistant to race 4 of SCN while Accomac is susceptible. Four of the remainder (6925, Coker 485, Hartz 5252 and Terral TV5495) all have spherical-flattened seeds while Accomac has spherical seeds. ~~The only remaining similar cultivar is Dyer, for which some information is missing. Since Dyer is an old cultivar which is not apparently grown anymore, side by side comparison data are not available. However, its 15 gram/100 seed size should be distinguishable from the 14 gram/100 seed size of Accomac. Also, by indirect comparison, it appears that Accomac would be significantly taller than Dyer. In the 1966 and 1967 Southern Regional Cooperative Uniform Test V, Dyer was one to two inches shorter than York. In the 1995 and 1996 Virginia State Variety tests, Accomac was two inches taller than York in both years. Using York as the link between the two sets of data, it would appear that Accomac would be three to four inches taller than Dyer.~~

Lwk
15 July, 1998

FORM APPROVED: OMB NO. 0581-0055

EXHIBIT C
(Soybean)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
~~LIVESTOCK, MEAT, GRAIN & SEED DIVISION~~
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Virginia Agricultural Expt. Station	V88-1234	Accomac

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
College of Agriculture and Life Sciences
Virginia Tech
Blacksburg, VA 24061

FOR OFFICIAL USE ONLY

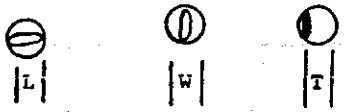
PVPO NUMBER

9800048

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[1]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][4] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[1] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[3] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[ ] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[1] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][8] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [ ] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★ [ ] Bacterial Blight (*Pseudomonas glycinea*)

★ [ ] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ [ ] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

★ [ ] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [ ] Other (*Specify*) _____

[ ] Target Spot (*Corynespora cassiicola*)

[ ] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[ ] Powdery Mildew (*Microsphaera diffusa*)

★ [ ] Brown Stem Rot (*Cephalosporium gregatum*)

[1] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

9800048

FUNGAL DISEASES: (Continued)

★ [ ] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[ ] Purple Seed Stain *(Cercospora kikuchii)*

[ ] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [ ] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [ ] Race 6 [ ] Race 7

[ ] Race 8 [ ] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[ ] Bud Blight (Tobacco Ringspot Virus)

[ ] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [ ] Cowpea Mosaic (Cowpea Chlorotic Virus)

[ ] Pod Mottle (Bean Pod Mottle Virus)

★ [1] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [2] Race 1 [1] Race 2 [2] Race 3 [1] Race 4 [ ] Other *(Specify)* _____

[ ] Lance Nematode *(Hoplolaimus Colombus)*

★ [2] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [ ] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[2] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[ ] Reniform Nematode *(Rotylenchulus reniformis)*

[1] OTHER DISEASE NOT ON FORM *(Specify):* _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [ ] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[1] Mexican Bean Beetle *(Epilachna varivestis)*

[2] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape		Seed Coat Luster	
Leaf Shape		Seed Size	
Leaf Color		Seed Shape	
Leaf Size		Seedling Pigmentation	

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted									
Name of Similar Variety									

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Exhibit E

Statement of the Basis of Applicant's Ownership

Accomac was originated and developed by Glenn R. Buss, an employee of Virginia Polytechnic Institute and State University. By agreement between employee and Virginia Polytechnic Institute and State University, all rights to any invention, discovery, or development made by an employee are assigned to Virginia Polytechnic Institute and State University. No rights to such invention, discovery, or development are retained by the employee.